

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

Claims 1-38 (Cancelled).

Claim 39 (Currently Amended): A method of ~~improving mobility for decreasing~~
degenerative processes in a joint of [[a]] an affected body segment having at least two muscle
groups associated with joint action of the affected body segment, the method comprising:

positioning at least two first electrodes at the body segment proximate to at least a
first muscle group from among said at least two muscle groups;

positioning at least two second electrodes proximate to at least a second muscle group
from among said at least two muscle groups; and

applying electrical stimulation to the body segment via first muscle group and the
second muscle group using the at least two first electrodes and the at least two second
electrodes,

wherein the electrical stimulation is adapted to mimic a sequencing of at least two
muscle groups proximate to the body segment and is sufficient to achieve visible and forceful
contraction of mimics a natural functioning of the joint without producing destructive wear
and tear on the joint by stimulating the at least two muscle groups in a pattern of normal joint
action based on an electromyographic output of a non-affected body segment.

Claim 40-42 (Cancelled).

Claim 43 (Currently Amended): The method of Claim 39, wherein the step of applying electrical stimulation includes applying the electrical stimulation for approximately ten minutes to approximately four hours.

Claim 44 (Currently Amended): The method of Claim 39, wherein the step of applying electrical stimulation includes applying the electrical stimulation within a range of approximately 5 mA to approximately 150 mA as rated into a 500 ohm load.

Claim 45 (Currently Amended): The method of Claim 39, wherein the step of positioning the at least two first electrodes includes positioning the at least two first electrodes at a front area of a thigh, and the step of positioning the at least two second electrodes includes positioning the at least two second electrodes at a back area of the thigh.

Claim 46 (Currently Amended): The method of Claim 39, wherein the affected body segment includes or is proximate to a joint having a synovium.

Claim 47 (New): The method of Claim 46, wherein the joint includes a knee.

Claim 48 (New): The method of Claim 39, wherein the step of applying electrical stimulation includes applying electrical stimulation to the affected body segment while the affected body segment is in a non-weight-bearing position.

Claim 49 (New): A method for decreasing degenerative processes in a joint of an affected body segment having at least two muscle groups associated with joint action of the affected body segment, the method comprising:

positioning at least two first electrodes proximate to at least a first muscle group from among said at least two muscle groups;

positioning at least two second electrodes proximate to at least a second muscle group from among said at least two muscle groups;

applying a first electrical stimulation to the affected body segment using the at least two first electrodes and the at least two second electrodes; and

applying a second electrical stimulation to the first muscle group and the second muscle group using the at least two first electrodes and the at least two second electrodes,

wherein the first electrical stimulation bathes the affected body segment with interferential stimulation and the second electrical stimulation mimics a natural functioning of the joint without producing destructive wear and tear on the joint by stimulating said at least two muscle groups in a pattern of normal joint action based on an electromyographic output of a non-affected body segment.

Claim 50 (New): The method of Claim 49, wherein at least one of the step of applying the first electrical stimulation and the step of applying the second electrical stimulation includes applying electrical stimulation for approximately ten minutes to approximately four hours.

Claim 51 (New): The method of Claim 49, wherein the step of applying the first electrical stimulation includes applying electrical stimulation at a range of approximately 0.1 mA to approximately 150 mA as rated into a 500 Ohm load.

Claim 52 (New): The method of Claim 49, wherein the step of applying the second electrical stimulation includes applying electrical stimulation at a range of approximately 5 mA to approximately 150 mA as rated into a 500 ohm load.

Claim 53 (New): The method of Claim 49, wherein the step of positioning the at least two first electrodes includes positioning the at least two first electrodes at a front area of a thigh, and the step of positioning the at least two second electrodes includes positioning the at least two second electrodes at a back area of the thigh.

Claim 54 (New): The method of Claim 49, wherein the body segment includes or is proximate to a joint having a synovium.

Claim 55 (New): The method of Claim 49, wherein the joint includes a knee.

Claim 56 (New): The method of Claim 49, wherein at least one of the step of applying the first electrical stimulation and the step of applying the second electrical stimulation includes applying electrical stimulation to the affected body segment while the affected body segment is in a non-weight-bearing position.

Claim 57 (New): The method of Claim 49, wherein the step of applying the second electrical stimulation includes applying neuromuscular electrical stimulation.

Claim 58 (New): A method for improvement of synovial fluid in a joint in a patient having a degenerative joint disease, the joint being associated with at least a first musculature and a second musculature, the method comprising:

positioning at least two electrodes proximate to the first musculature;
positioning at least two electrodes proximate to the second musculature; and
applying electrical stimulation to the first and second musculature,
wherein the electrical stimulation is adapted to mimic a natural sequencing of said first and second musculature without producing destructive wear and tear on the joint based on an electromyographic output of said first and second musculature, and
wherein the joint is in a non-weight bearing position.

Claim 59 (New): The method of Claim 58, wherein the step of applying electrical stimulation includes applying the electrical stimulation for approximately ten minutes to approximately four hours.

Claim 60 (New): The method of Claim 58, wherein the step of applying electrical stimulation includes applying the electrical stimulation within a range of approximately 5 mA to approximately 150 mA as rated into a 500 ohm load.

Claim 61 (New): The method of claim 58, wherein said degenerative joint disease is osteoarthritis.